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HENRY V. POOR, Editor.

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GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

PRINCIPAL CONTENTS.

American Railroad Journal.

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Saturday, December 28, 1850.

☞ The present number completes the volume for 1850. The *Index* will accompany the second number of the next volume, and will be sent to all subscribers to the present volume.

Virginia Manufactures.

The Reports of the Committee of the Manufacturers' Convention, recently held at Richmond, do not present the condition of the manufacturing interests of this State in a very flattering light. The committee appointed to inquire into the condition of the iron manufacture, reported, that although the present capacity of the mountain works near the James river, now established, is equal to the production of at least 25,000 tons of pig iron annually, their production the present year does not exceed 9,000 tons, and is not likely to exceed 2,500 tons for the year ensuing.

This decline in the amount of iron produced is in the face of greatly reduced cost of transportation. The James River canal is now opened to Lynchburg, and is soon to be opened to Buchanan, the centre of the iron manufacture in this part of Virginia, affording a cheap and expeditious means of sending to a market. Certainly, if charcoal iron can be made in any part of the country to profit, it can in Virginia.

The committee also state that there are in Virginia 50 blast furnaces, capable of producing yearly 54,500 tons of pig iron, which now are not producing more than 11,700 tons. Estimating each of these furnaces to have cost $20,000—which is a very low estimate—we have an amount of one million of dollars. At $25 per ton for pig iron—which is a low price—these furnaces would produce to the State the sum of $1,362,500. Their product this year will not exceed $300,000. Their product next year will be very much smaller.

Of the four rolling mills, two have stopped, one is doing not more than third work, and the fourth employed in the manufacture of nails is subjected to the depression of that business, resulting from other mills established for different purposes, being driven into that manufacture as the only one safe from foreign competition, and so producing a glut of the nail market.

The committee further state, that while the government during the last year has gained some $40,000 of additional income by the increased importation of foreign coal, under the tariff of 1846, Virginia has lost on her present inconsiderable coal trade alone, at least $200,000 by diminished production. She has lost, in addition, the profit which would accrue to her works of internal improvement from the carriage of the additional quantity of coal.

Virginia with an area of coal measures of not less than 21,000 square miles, much of which lies on or near navigable waters, and is capable of yielding all the varieties of British coal, and of equal quality, is reduced to the actual production of less than 200,000 tons, of the value of $600,000. Great Britain, with little more than half the extent of coal measures, produces annually 37,000,000 tons, of about the value of $37,000,000 at the mines, and $80,000,000 at the markets of sale.

Lead also exists, and has been mined to some extent in the county of Wythe, but the production is now confined to the wants of the immediate neighborhood, but could be increased to an adequate extent.

Copper ores also are found in several counties and may hereafter, by the encouragement of the copper manufactories of the country furnishing a market for them, become a source of much wealth, besides adding immensely to the consumption of coal. The consumption of copper in the United States now amounts to upwards of $3,000,000 per annum, about one third of which is imported from England in sheets.

The cotton and woollen mills are in no more thriving condition than the mining interests.—There are now in that State 20 companies, incorporated and private, engaged in the manufacture of cotton, with an aggregate capital of $1,800,000. When in full operation, these companies employ about 54,000 spindles, producing generally coarse yarns, and sold as such, or are converted into shirtings, sheetings and osnaburgs. There is not a single factory designed for the production of yarns of a higher number than No. 20.

For many months past these have not been in full operation. At present about

7000	spindles are running	three-fourths	of the time.
8000	" "	one-third	"
22000	" "	full time at three-fourths wages to the operatives.	
6000	spindles stopped.		

And the remainder of the 54,000 spindles are believed to be working short time, or are entirely idle. From the facts gathered by the committee, they are of opinion that the present production is about one half the capacity of the mills, and that the entire capital invested in cotton mills in Virginia will be found to have paid no profit to the stockholders or proprietors for the years 1849 and 1850. The very few mills which paid small dividends in the early part of the year 1849, will be much more than balanced by the losses of others. There can be no doubt that large losses have accrued upon the entire capital invested in cotton manufacturing in this State. In Maryland the state of things, if possible, is worse than in Virginia. The whole number of cotton factories in Maryland is 28.

Working short time	18
Working full time	2
Entirely idle	8
	28

The total production less than half the capacity of the mills.

Woolen Factories in Maryland—Franklin mills, at work; Calverton mills, working half time.

In Virginia there are 10 woolen factories, running 30 sets of machinery, with a capital of $275,000. A portion of these are idle, and it is stated that the whole are working without profit.

There are now manufactured in Virginia about 3,500,000 bushels of salt. Of this amount 3,000,000 are made at the Kanawha Springs, and the balance in Washington and Wythe counties.

Such is represented to be the condition of the leading manufacturing interests of Virginia by those engaged in them, and who, of course, possess the best means of judging. There can scarcely be found, in any part of the world, an equal extent of country, so rich in minerals of the most valuable kind, as Virginia. With all these riches she enjoys extraordinary commercial advantages, and means of forwarding her products to a market.—Yet with all these advantages, her minerals have nearly ceased to be worked; and every branch of manufacturing seems to be drying up. Certainly something is out of joint, or such an anomalous state of things could not be presented as the one which we witness here.

Statistics Accompanying the Treasurer's Report.

A statement exhibiting the value of certain articles imported during the years ending on the 30th June, 1844, 1845, 1846, 1848, 1849 and 1850, (after deducting the re-exportations) and the amount of duty which accrued in each during the same periods respectively.

1844.

	Value.	Duties.
Woolens	9,408,279	3,313,495
Cottons	13,236,830	4,850,731
Hempen goods	865,427	213,861
Iron and manuf. of	2,395,860	1,607,113
Sugar	6,897,245	4,597,093
Hemp unmanuf	261,913	101,338
Salt	892,112	654,881
Coal	203,681	133,845
Total dollars	34,161,247	15,472,358

1845.

	Value.	Duties.
Woolens	10,504,423	3,731,014
Cottons	13,360,729	4,908,272
Hempen goods	801,661	198,642
Iron and manuf. of	4,075,142	2,415,003
Sugar	4,049,708	2,555,075
Hemp unmanuf	140,372	55,122
Salt	883,359	678,069
Coal	187,962	130,221
Total dollars	34,003,356	14,671,418

1846.

	Value.	Duties.
Woolens	9,935,925	3,480,797
Cottons	12,857,422	4,865,483
Hempen goods	696,888	138,394
Iron and manuf. of	3,660,631	1,629,581
Sugar	4,397,239	2,713,866
Hemp unmanuf	180,231	62,282
Salt	748,566	509,244
Coal	336,691	254,149
Total dollars	32,813,538	13,653,796

1848.

	Value.	Duties.
Woolens	15,061,102	4,196,007
Cottons	17,205,417	4,166,673
Hempen goods	606,900	121,380
Iron and manuf. of	7,060,473	2,118,141
Sugar	8,775,220	2,632,567
Hemp unmanuf	180,335	54,100
Salt	1,027,656	205,531
Coal	426,997	128,099
Total dollars	50,344,100	13,022,498

1849.

	Value.	Duties.
Woolens	13,505,720	3,726,989
Cottons	15,182,518	3,769,294
Hempen goods	460,835	92,067
Iron and manuf. of	9,189,743	2,656,923
Sugar	7,576,303	2,272,891
Hemp unmanuf	478,232	143,470
Salt	1,424,529	284,906
Coal	387,370	116,211
Total dollars	48,904,750	13,162,751

1850.

	Value.	Duties.
Woolens	16,900,916	4,682,457
Cottons	19,635,936	4,898,475
Hempen goods	520,232	104,046
Iron and manuf. of	16,232,018	4,896,604
Sugar	6,332,068	1,899,620
Hemp unmanuf	574,783	172,435
Salt	1,287,518	245,504
Coal	361,855	108,557
Total dollars	61,835,321	16,980,698

Statement exhibiting in the aggregate value of breadstuffs and provisions exported annually from 1821 to 1850 inclusive.

Years ending.		Breadstuffs & provisions. Value.
September 30th	1821	12,841,901
"	1822	13,886,856
"	1823	13,767,847
"	1824	15,059,484
"	1825	11,634,449
"	1826	11,303,496
"	1827	11,685,556
"	1828	11,461,144
"	1829	13,131,858
"	1830	12,075,430
"	1831	17,538,227
"	1832	12,424,703
"	1833	14,209,128
"	1834	11,524,024
"	1835	12,009,399
"	1836	10,614,130
"	1837	9,588,359
"	1838	9,636,650
"	1839	14,147,779
"	1840	19,067,535
"	1841	17,196,102
"	1842	16,902,876
9m end. June 30	1843	11,204,123
Year.	1844	17,970,135
"	1845	16,743,421
"	1846	27,701,121
"	1847	68,701,921
"	1848	37,472,751
"	1849	39,155,507
"	1850	26,051,373
Total		$535,207,285

Statement of the annual expenses of the government, exclusive of the payments on account of the public debt, of trust funds, and of the collection of the revenue, from the 1st January, 1828, to 31st December, 1845.

Years.		*Expenditure.*	
From 1st Jan. to 31st Dec.	1828	12,530,846 43	
	1829	12,632,321 84	
	1830	13,229,533 33	
	1831	13,863,786 13	
	1832	16,514,134 69	
	1833	22,044,237 31	
	1834	18,410,392 10	
Average annual increase of expenditure from 1828 to 1841, $943,923 56...	1835	17,005,418 55	
	1836	29,358,902 16	
	1837	31,505,680 18	
		187,095,253 73	
	1838	31,468,839 04	Average annual expenditure $26,468,570 73
	1839	25,410,050 67	
	1840	25,249,626 95	
	1841	25,745,776 94	
		105,874,282 94	
From 1st Jan. to 30th June	1842	12,888,228 63	
From 1st July, 1842, to June 30	1843	22,724,205 78	Average annual expenditure $22,987,411 78
From 1st July, 1843, to June 30	1844	19,835,793 48	
From 1st July, 1844, to June 30	1845	21,273,705 67	
From 1st July to 31st Dec.	1845	15,227,713 58	
		$91,949,647 14	

A Statement exhibiting the amount of coin and bullion imported and exported annually, from 1821 to 1850, inclusive; and, also, the amount of importation over exportation and of exportation over importation during the same years.

Year ending 30th Sept.	COIN AND BULLION. Imported.	Exported.	Excess of Importation over exportation.	Excess of Exportation over importation.
1821	8,064,890	10,478,059		2,413,169
1822	3,369,846	10,810,180		7,440,334
1823	5,097,896	6,372,937		1,275,091
1824	8,379,835	7,014,552	1,365,283	
1825	6,150,765	8,797,055		2,646,290
1826	6,880,966	4,704,533	2,176,433	
1827	8,151,130	8,014,880	136,250	
1828	7,189,741	8,243,476		753,735
1829	7,403,612	4,924,020	2,479,592	
1830	8,155,964	2,173,773	5,977,191	
1831	7,305,945	9,014,931		1,708,936
1832	5,907,504	5,656,340	251,174	
1833	7,070,368	2,611,701	4,453,667	
1834	17,911,632	2,076,758	15,834,874	
1835	13,131,447	6,477,775	6,653,672	
1836	13,400,831	4,324,336	9,076,545	
1837	10,516,414	5,976,249	4,540,165	
1838	17,747,116	3,508,046	14,239,070	
1839	5,595,176	8,776,743		3,181,567
1840	8,882,813	8,417,014	465,799	
1841	4,988,633	10,034,332		5,045,699
1842	4,087,016	4,813,589		726,523
*1843	22,390,335	1,590,791	20,799,544	
†1844	5,830,429	5,454,214	376,215	
†1845	4,070,242	8,606,495		4,536,253
†1846	3,777,732	3,905,268		127,536
†1847	24,121,289	1,907,739	22,213,550	
†1848	6,360,240	15,841,620		9,481,396
†1849	6,651,240	5,404,648	1,246,592	
†1850	4,628,792	7,522,994		2,894,202
	263,449,873	193,390,048	712,290,606	41,230,781

* 9 months ending 30th June. † year do. do.

A statement exhibiting the total value of imports, and the imports consumed in the United States, exclusive of specie, during each fiscal year, from 1821 to 1850; showing also the value of the domestic and foreign exports, exclusive of specie, and the tonnage employed during the same period.

Years.	Total imports.	Imports comsumed exclusive of specie.	Domestic produce exported exclusive of specie.
1821	62,585,724	43,696,405	43,670,394
1822	83,341,541	68,307,425	49,879,079
1823	77,579,267	51,308,936	47,155,408
1824	80,549,007	53,846,567	50,649,500
1825	96,340,075	66,395,722	66,944,855
1826	84,974,477	57,652,577	52,449,745
1827	79,484,063	54,901,103	57,878,117
1828	88,509,824	66,975,075	49,976,632
1829	74,492,527	64,741,671	55,087,307
1830	70,876,920	49,675,099	58,524,878
1831	103,191,124	82,808,310	59,218,584
1832	101,029,266	75,227,988	61,726,529
1833	108,118,311	84,470,087	69,950,856
1834	126,521,332	86,973,147	80,623,662
1835	149,895,742	122,007,974	160,459,481
1836	189,980,035	158,811,392	106,570,942
1837	140,989,217	113,310,571	94,280,825
1838	113,717,404	86,552,598	95,160,880
1839	162,092,132	145,879,816	101,625,533
1840	107,141,519	86,250,335	111,660,561
1841	127,146,177	114,776,309	103,636,236
1842	105,162,087	87,994,318	91,799,242
1843	64,753,799	37,291,129	77,686,354
1844	108,435,035	96,390,548	99,531,774
1845	117,254,564	105,399,541	98,455,330
1846	121,691,797	110,048,859	101,718,042
1847	146,545,638	116,859,595	150,574,844
1848	154,998,928	140,651,902	130,263,709
1849	147,857,439	132,565,108	181,710,081
1850	178,136,318	164,022,033	134,900,932

	Foreign merchandise exported exclusive of specie.	Total exports.	Tonnage.
1821....	10,834,429	64,974,382	1,298,958
1822....	11,504,270	72,160,281	1,324,699
1823....	21,172,485	74,699,030	1,336,566
1824....	18,391,605	75,986,657	1,389,163
1825....	23,793,588	99,535,388	1,423,112
1826....	20,440,934	77,595,322	1,534,191
1827....	16,431,880	82,324,827	1,620,608
1828....	14,044,608	72,264,686	1,741,392
1829....	12,347,344	72,358,671	1,260,796
1830....	13,145,857	73,349,508	1,191,776
1831....	13,077,069	81,309,582	1,267,847
1832....	19,794,074	87,176,943	1,439,450
1833....	17,577,876	90,140,433	1,606,150
1834....	21,036,553	104,336,973	1,758,907
1835....	14,756,321	121,693,577	1,824,940
1836....	17,767,762	128,663,040	1,882,103
1837....	17,767,762	117,419,376	1,896,686
1838....	9,417,690	108,486,616	1,995,640
1839....	10,626,140	121,028,416	2,096,380
1840....	12,008,371	132,085,946	2,180,774
1841....	8,181,235	121,851,503	2,130,744
1842....	8,078,753	104,691,534	2,092,391
1843....	5,139,335	84,346,480	2,158,603
1844....	6,214,058	111,200,046	2,280,095
1845....	7,584,781	114,646,606	2,417,002
1846....	7,865,206	113,488,516	2,562,085
1847....	9,160,754	152,648,622	2,839,046
1848....	7,986,802	154,032,131	3,154,042
1849....	8,641,091	145,755,820	3,334,015
1850....	9,475,493	151,893,720	3,535,454

Statement of the aggegate annual expenses of the goverment, exclusive of trust funds, the expenses of Post Office Department and the payment of the principal and interest of the public debt, and the debt assumed per act of May, 20, 1836, from 1st July, 1842, to the 30th June, 1850, and of the appropriations for the year ending 30th June, 1851.

Years ending	Aggregate expenses.	Payments on account of revenue from customs and land sales.
30th June, 1843...	22,724,205 78	4,034,643 79
30th June, 1844...	19,885,793 38	3,822,313 04
30th June, 1845...	21,273,705 67	4,539,880 07
	63,833,704 93	12,396,836 90
Average of 3 years..	21,277,901 64	4,132,278 97
30th June, 1846...	26,690,774 40	4,693,954 76
30th June, 1847...	55,811,633 66	4,053,290 97
30th June, 1848...	42,698,619 05	3,241,404 13
	125,201,017 11	11,988,649 86
Average of 3 years..	41,733,672 37	3,996,216 62
30th June, 1849...	38,048,819 08	3,015,914 08
30th June, 1850...	32,804,500 66	2,649,990 47
Estimates and appropriations for '51	46,068,859 08	2,518,670 81
	116,922,178 82	3,184,575 36
Average of 3 years..	38,974,059 60	2,728,191 78

STATEMENT of the amount of Gold deposited in the Mint of the United States and its Branches, from Mines in the United States, to October 31, 1850.

Periods.	Virginia.	North Carolina.	South Carolina.	Georgia.	Tenns.	Ala.	New Mexico.	California.	Various sources.	Total.
1824...	....	5,000	....	....	....	....	....	....	....	5,000
1825...	....	19,000	....	....	....	....	....	....	....	17,000
1826...	....	20,000	....	....	....	....	....	....	....	20,000
1827...	....	21,000	....	....	....	....	....	....	....	21,000
1828...	....	46,000	....	....	....	....	....	....	....	46,000
1829...	2,500	134,000	3,000	....	....	....	....	....	....	140,000
1830...	24,000	204,000	26,000	212,000	....	....	....	....	....	466,000
1831...	26,000	294,000	22,000	176,000	1,000	....	....	....	1,000	520,000
1832...	34,000	458,000	45,000	140,000	1,000	....	....	....	....	603,000
1833...	104,000	475,000	66,000	216,000	7,000	....	....	....	....	868,000
1834...	63,000	380,000	38,000	415,000	3,000	....	....	....	....	893,000
1835...	60,400	263,500	42,400	319,900	100	....	....	....	12,200	688,500
1836...	62,000	148,100	55,200	201,400	300	....	....	....	....	467,000
1837...	52,100	116,900	29,400	83,600	....	....	....	....	....	282,000
1838...	55,000	66,000	13,000	36,000	1,500	....	....	....	200	171,700
1839...	57,600	53,500	6,300	20,300	300	500	....	....	....	138,500
1840...	38,995	36,804	5,319	91,113	104	4,431	....	....	....	176,766
1841...	25,738	76,431	3,440	139,796	1,212	3,863	....	....	....	248,478
1842...	42,163	61,629	233	150,275	....	5,597	....	....	13,717	273,587
1843...	48,143	62,873	5,099	56,619	2,788	4,786	....	....	415	180,728
1844...	40,595	194,917	11,856	30,739	2,240	12,298	....	....	2,377	295,022
1845...	86,783	365,886	5,386	17,325	3,202	6,472	....	....	4,328	489,382
1846...	55,538	286,105	100,841	13,601	2,662	7,542	....	....	....	466,089
1847..,	67,736	99,491	1,102	10,647	2,511	2,022	....	....	....	133,409
1848...	57,886	109,635	19,228	3,370	3,497	3,670	682	44,177	....	241,544
1849...	129,382	102,688	4,309	10,425	2,739	2,977	32,889	5,481,439	154	5,767,092
1850*..	65,576	40,568	759	4,928	307	1,178	5,592	22,671,083	326	24,789,817
Total..	1,199,388	4,138,416	504,162	2,349,040	35,442	53,218	39,162	28,196,699	34,767	26,542,594

* 10 months.

SUMMARY STATEMENT

Of the Coinage of the Mint and Branches to October 31st, 1850, inclusive.

MINTS.	Commencement of coinage.	Gold coinage. Value.	Silver coinage. Value.	Copper coinage. Value.	Entire Coinage. No. pieces.	Value.
Philadelphia.	1793	83,153,539 50	64,440,617 90	1,283,301 75	324,915,157	148,877,453 15
New Orleans	1838	18,731,865 00	12,366,700 00	....	38,622,645	31,093,565 00
Charlotte	1838	2,646,050 00	....	....	623,956	2,646,050 00
Dahlonega	1838	3,959,666 00	....	....	897,956	3,950,666 00
Total		108,482,120 50	76,807,311 90	1,283,301 75	365,055,884	186,572,734 15

SUMMARY STATEMENT

Of the Deposits of Domestic Gold at the Mint of the United States and Branches, to October 31, 1850.

MINTS.	Virginia.	N. Carolina.	S. Carolina.	Georgia.	Tennessee.	Alabama.	N. Mexico.	California.	Various sources.	Total.
Philadelphia	1,197,838	4,138,416	504,162	2,349,049	35,442	53,318	38,963	28,196,699	34,707	36,548,594
N. Orleans	....	741	16,217	39,681	2,719	76,242	....	3,611,355	6,396	3,753,351
Charlotte	....	2,489,314	181,012	....	....	....	....	....	....	2,670,326
Dahlonega	....	78,987	116,301	3,629,873	38,413	57,067	....	30,025	....	3,950,666
Total	1,197,838	6,707,458	817,692	6,018,603	76,574	186,627	38,963	31,838,079	41,103	46,922,957

STATE VALUATION OF MASSACHUSETTS.

The following interesting table shows the State valuation for the present year as determined by the valuation committee, compared with that of 1840.

	1850.	1840.
Suffolk	$214,789,372	$110,000,000
Essex	55,556,446	31,110,204
Middlesex	82,264,719	37,592,082
Worcester	55,497,793	29,804,316
Hamshire	12,331,019	7,298,351
Hampden	23,641,220	10,188,423
Franklin	9,751,728	6,548,694
Berkshire	17,137,607	9,546,926
Norfolk	47,086,510	15,522,527
Bristol	38,733,046	19,493,685
Plymouth	19,163,558	10,694,719
Barnstable	8,897,349	4,896,683
Dukes	1,235,292	1,109,344
Nantucket	4,505,202	6,074,374
	$590,531,881	$299,878,329

Population of Philadelphia.

The following are the complete returns of the population of Philadelphia, by recent census.

Wards.	Population.	Houses.	Families
Old Philad. City	12,376	1,858	2,076
North Mulberry	8,741	1,308	1,436
South Mulberry	11,035	1,308	1,437
North	11,035	1,507	1,759
Locust	10,723	1,469	1,597
Middle	7,225	911	1,154
South	6,991	932	1,139
Lombard	6,201	895	1,076
Spruce	6,792	950	1,263
Cedar	9,009	1,235	1,959
New Market	8,256	1,147	1,520
Pine	6,149	808	1,134
Dock	5,734	585	675
Walnut	2,544	278	369
Chesnut	2,443	272	332
High Street	3,549	385	537
Lower Delaware	6,425	385	1,024
Upper Delaware	7,224	910	1,130
Northern Liberties	121,417	16,272	20,178
	47,233	6,854	8,056
Spring Garden	58,895	9,150	10,501
Kensington	46,776	7,555	9,066
Southwark	38,799	6,451	7,559
Moyamensing,	26,979	4,096	5,269
Suburban Districts.			
Passyunk	1,607	228	232
Kingsessing	1,778	289	299
West Philadelphia	5,670	942	982
Blockley	5,910	549	557
Penn District	8,939	1,302	1,577
North Penn	2,687	447	460
Roxborough	2,660	465	466
Manayunk	6,210	1,003	1,175
Germantown	8,336	1,292	1,432
Bristol	2,230	354	355
Frankford	5,346	993	1,074
Oxford	1,787	255	271
White Hall	389	82	86
Lower Dublin	4,297	695	741
Byberry	1,130	203	207
Moreland	493	81	85
Richmond	5,840	1,025	1,124
Bridesburgh	915	185	185
Aramingo	694	120	120
Old Nor'n Liberties	1,938	309	335
	68,956	10,824	11,736

RECAPITULATION

Old City proper	121,417	16,272	20,178
Northern Liberties	47,233	6,854	8,056
Spring Garden	58,895	9,150	10,501
Kensington	46,776	7,555	9,066
Southwark	38,799	6,451	7,559
Moyamensing	26,979	4,096	5,269
Richmond	5,840	1,025	1,124
Penn District	8,939	1,302	1,577
West Philadelphia	5,670	942	982
Total	360,538	53,647	64,312

Increase in 10 years, 148,320, or 57 per cent.

MICHIGAN CENTRAL ROAD TO CHICAGO.

A proposition from J. W. Brookes, Esq. to the Board of directors of the Galena and Chicago Railroad Co., appears in the Chicago papers The G. and C. R. R. have a charter for the extension of their road to the Indiana line, and the Central Road now make a reasonable proposition to connect with them—building the road and allowing the Southern road, or any other, the privilege of drawing their cars over it upon such conditions as the Southern road or Buffalo and Mississippi, shall grant the Central Company upon the road west from Michigan city. They ask for no special privileges; only that they have free competition with any other road. The Chicago people, we should judge were decidedly in favor of granting the proposition. as it gives a free competition to all roads and no exclusive privilege to either Southern or Central. Give them the privilege and you will have a road through your city in less than a year.—*Detroit Tribune.*

SELF-IMPOSED TAXATION.

Mr. G. Porter, in a communication to the British Association, shows that the working classes of the United Kingdom expend on three articles of luxury the use of which he presumes might advantageously be dispensed with, viz.: Spirits, Beer and Tobacco, the following sums respectively, £24,091,458. $25,383,165, and £7,588,607, making a total of £57,063,230. "A sum,' says he, which must appear "perfectly fabulous until the reasonableness of the result be shown by means of calculations adopted and formed on good authority.

THE INTERNAL COMMERCE OF THE COUNTRY.

The aggregate value of the lake trade, as appears by returns made at the bureau of the Topographical Engineers, amounts to the enormous sum of $186,485,269! or more by $40,000,000 than the whole foreign export trade of the country. The aggregate tonnage is 203,041 tons, of which 35,904 is foreign. The net value of the commerce of the western rivers is $256,233,820, the value of vessels $18,661,500, The gross value of the internal commerce of the United States, which is almost double that of the net value, is $795,654,774.

Scarcity of Silver Coin.

The following article, which we find in the Philadelphia North American, presents interesting statements upon a subject of marked interest, especially commercial circles:

The present scarcity of silver coin is very inconvenient and shows the expediency, if not the necessity of an alteration in the mint law.

The act of 1837, like those it superseded, proceeds upon a false principle, inasmuch as it fixes a relative value between gold and silver coins; at which they are both or either of them, legal tenders giving the payer the option of selecting the least valuable coin to discharge his debt, thus forcing the circulation of one metal and banishing the other from sight. Again—our coins are taken abroad at their intrinsic market value, and consequently the legally undervalued metal is always sought for at a premium for exportation and sale, and this is enough to prevent the banks from issuing a dollar of it more than they can avoid.

The intrinsic value of coins constantly fluctuates with the supply of the metal composing them; and since, therefore, the true value of relative gold and silver is always changing, it is absurd to fix an arbitrary legal relative value, which has the effect of making gold coin money, and silver coin a commodity, or the reverse.

The fluctuations in the relative value of gold and silver have been greater than is usually supposed.

Judging from the English coinage, which however, is only an approximation, this value was, in

A. D. 1344,	1 oz. of gold was worth	12	oz. of slvr.
1546,	1 oz.	do.	do.	5	oz.	do.
1717,	1 oz.	do.	do.	15 2	oz.	do.
1846,	1 oz.	do.	do.	14 28	oz.	do.

The fall in the value of silver from 1546 to 1717, is attributed to the supply from the American mines, and the discoveries in California promise to reverse the movement.

By the act of Congress of 1792, 1 oz. of gold was made worth 15 oz. of silver, and the practical result was that until 1834, gold coin was not a circulating currency, but was bought and sold at a premium.

The act of 1834 made the proportion 1 to 16, and that of 1837 made it nearly the same. The relative values of gold and silver in the coinage of England is 1 to 14 28; France 1 to 15 nearly; and the United States 1 to 16 nearly.

We have now an over valuation of the gold, and this has probably lately been increased by the produce of the Russian and California mines.

The result is that silver coin is sought for exportation at a premium, and horded by the holders to an extent that is becoming very inconvenient to those having payments for wages, or small sums: and as the tendency of the arrivals of California gold is to create a high exchange on Europe we may expect that silver coin may be banished from circulation, or from the country.

The same results have occured in other countries from the same causes. On the continent of Europe the current coins are silver, gold generally bearing a premium.

The British Mint act of 1846, has remedied the evil for that country by a simple provision making gold coin only a legal tender for more than forty shillings, and silver coins far under that amount, the silver coin being at the same reduced to weight to insure its not being exported.

The extent of this reduction, compared to our standard, is shewn by the fact that $100 in American gold coin, (containing 322 grains fine gold,) would be coined at the British mint into £20 10 11½d., and a 100 dollars in our silver coin, containing 37.125 grains of fine silver, would be coined into £22 19 10½d. of British silver.

Gold, therefore, is the legal currency of Great-Britain—silver being pleety for change—and bearing the same relation to gold, that copper does with us to gold and silver,

It seems clear that if we make gold and silver legal tenders, we must make up our minds to do without one of them; but if gold alone is a legal tender, we can have both in convenient use.

The alterations proposed would have no effect upon existing contracts, as the standard of gold coin would remain unchanged and the debtor would not be permitted to pay in the reduced silver coin.

Further information may be found in MacCullough's Com. Dic.; article coin, (American edition.)

COMPARATIVE ELASTICITY OF WROUGHT & CAST IRON.

The mean ultimate resistance of wrought iron to a force of compression, as useful in practice, is 12 tons per square inch, while the crushing weight of cast iron is 49 tons per square inch; but for a considerable range; under equal weights, the cast iron is twice as elastic, or compresses twice as much as the wrought iron.

A remarkable illustration of the effect of intense strain on cast iron was witnessed by the author, at the works of Messrs. Easton and Amos. The subject of the experiment was a cast iron cylinder 10½ inches thick, and 14½ inches high, the external diameter being 18 inches.

It was requesite for a specefic purpose to reduce the internal diameter 3½ inches, and this was effected by the insertion of a smaller cast iron cylinder into the centre of the large one; and to insnre some initial strain, the large cylinder was expanded by heating it, and the internal cylinder being first turned to large, was thus powerfully compressed.

The inner cylinder was partly filled with pewter, and a steel piston being fitted to the bore, a pressure of 972 tons was put on the steel piston. The steel was "upset" by the pressure, and the internal diameter of the small cylinder was increased by full three-sixteenths of an inch; *i. e.*. the diameter became 3 eleven-sixteenths on an inch! A new piston was accordingly adapted to these dimensions,—and in this state the cylinder continues to be used, and to resist the pressure: the external layer of the inner cylinder was thus permamantly extended 8 one-fiftheths of its length. In fact it can only be regarded as loose packing giving no addition strength to the cylinder.

Under these high pressures, when confined mechanically, cast iron as well as other metals appears, like liquids, to exert an equal pressure in every direction in which its motion is opposed.—*Clark's Britannia and Conway Tubular Bridges.*

Ohio.

Railroad Meeting at St. Clairsville.—The meeting on Saturday last at St Clairsville, on the subject of a subscription on the part of Belmont county to the Western Ohio Railroad was interesting, and the subject generally discussed by Messrs. Carrol, Kennon, Sullivan. of Zanesville, Wharton, Cowen, Clemens and Rammage. No action was taken at the meeting except to adjourn to 1st Thursday in January, when we opine there will be one of the largest meetings ever held in the county. The feeling has been aroused throughout the County.—*Wheeling Gazette.*

New York.

Buffalo and Cohocton Railroad.—There is to be a meeting of the Board of Directors at Bath, on the 7th of January, to prepare the road for letting. It is proposed to have forty miles from Corning West, graded and ready for superstructure by the first of August next, and cars running by the first of October, while at the same time the work will be going forward on the other sections.

Albany and Schenectady Railroad.—The traffic on the Albany and Schenectady Railroad during the month of November, proves to be much larger than the estimates of the Directors in their report to the Stockholders. The receipts are as follows:

From passengers	$10,903 43
" freight.....	6,719 18
	17,622 21
November, last year.....	15,412 55
Increase.....	$2,210 06

Trade between the U. States and Canada.

The Oswego Times publishes the statistics collected by direction of the Treasury Department, in relation to the nature, extent and progress of the trade between the United States and Canada. The tables embrace the year 1840, '45 '49 and the greater portion of the present year.

The following is a summary of the tables published by the times:

	Imports from Canada.	Exports from Canada	
1840....	$162,741	$2,742 51	$398,356
1843....	354,264	10,448 62	8,015,879
1849....	3,231.317	561,493 68	3,687,635
1850....	2,832,783	566,221 28	3,094,873
Total	$6,581,135	$1,140,966 09	$11,146,743

This shows an apparent excess in the value of exports over imports of $4,565,608.

In the elevens millions of exports in four years there are $3,218,736 of "foreign merchandize."—goods which pass through our canals in preference to making the passage of the St. Lawrence river,

Now we will compare the increase of imports and exports for 1840 and 1849, on lumher, animals and vegetable food, of which there is a surplus on both sides of the line:

	Imports from Canada.		Exports from Canada.	
	1840.	1849.	1840.	1849.
Products of				
Forest	$23,303	$708,161	$22,296	$86,816
Animals	4,532	308,393	32.313	117,999
Vegetable food	672	1,544,859	150,044	230,529
Total....	$28,507	$2,561,416	$204,683	$445,344
		28,507		204,683
Inc. of Imports....		$2,532,909	Inc. of Ex.	$320,66

It will be seen that while the exports of the above articles in 1840 were nearly eight times greater than the imports, the imports in 1849, in spite of our duties were nearly six times greater than the exports. This shows that Canada prefers our market to her own; and the use of our canals to the free navigation of the St. Lawrence river.

Connecticut.

Hartford and Willimantic Railroad.—We learn that the receipts during the year have amounted to $90,000, and that during the last three months they have averaged about $10,000 a month. It is only one year since the portion of the road between Hartford and Willimantic was opened to the public. About a month later the cars were running west to

Plainville, and in June the road was finished to Bristol. These are facts highly encouraging to the future prosperity of the road. A small dividend has been earned, but it has been used to reduce the liabilities of the company.

NO COAL IN CALIFORNIA.

Mr. P. T. Tyson, of Baltimore, as the result of a scientific visit to the late Territory of California effectually contradicts the report of a plentiful supply of coal there, in a communication to one of the Departments at Washington; and it seems likely he says, that the same geological features extend from near the Oregan boundary to the southern terminus of Lower California. An inspection of the various localities where coal has been reported to exist, proved that every one of those beds described as of "the best quality for steaming," were composed of either lignite or bitumen, or something or other still further removed from the character of coal. It is to Vancouver's Island Mr. Tyson says, that California must look for supplies unless they may be obtained from Oregon

New York.

The citizens of Potsdam (on the Ogdensburgh railroad,) have appointed a committee to organize a company, open books, and take all necessary incipient measures for the construction of a railroad from Potsdam to some point on the road from Albany to Buffalo. Such a road would greatly benefit the Ogdensburgh by giving to it a portion of the travel and trade to and from Buffalo direct.

Alabama.

The Selma Railroad.—We learn from the Reporter that ground was broken on the Alabama and Tennessee River Railroad on Monday, 25th ult., by Messrs. R. M. and W. Waddell. Other contractors will soon commence operations. We believe with the Reporter, that considering the enterprise of the contractors, the energy of the chief engineer and his corps and the zeal and ability of the Directors and the President, this great work will be completed within the shortest possible time. *Cr. Alabama Planter.*

New Jersey.

An election for Directors of the Paterson and Hackensack Railroad Company was held at the Franklin-House, in this town, on the 20th inst., when the following persons were duly elected for the ensuing year:

D. K. Allen. Garret S. Van Wagoner, and Samuel Smith, of Paterson; John Huyler, and John Ackerman, Jr., of Bergen; and Alonzo R. Smith Robert Davis, of New York.

We learn that a flare-up occured among the stock-holders at this meeting, when a motion was made to dissolve or abandon the whole concern, which was carried; but upon cooling down a little the motion was reconsidered, and the election of Directors proceeded with, which resulted as above.

Kentucky.

Prospects of the Maysville Railroad.—The following flattering statement of the prospects of this road. is from the Maysville Eagle:

To remove doubts in some quarters and delusions and misrepresentations in others, we shall here state the prospects of the Maysville railroad for means of construction.

The city of Maysville has subscribed $150,000 stock. The citizens of Maysville by private subscription, have taken over 105,000 stock. Nobody doubts that Mason county in her corporate capacity, will by a decisive expression, take $150,000 stock. In addition to all this, the compeittion in private subscriptions on the rival routes, will add at least $50,000, and probably 100,000 to the stock —in the aggregate, say $455,000 at the least.

Our prospects in Nicholas, Bourbon and Fayette are brightening daily, Fayette witho t doubt, ill vote us $200,000, besides private sub riptions on the adopted route. Bourbon will vote as much in the end, or if not, we can get that much on the North Middletown route by private subscriptions. Nicholas we are assured, will vote $100,000, besides private subscriptions on the route. Louisville has already proffered $100,000, and we are advised will double it if necessary.

The resources above mentioned, when all drawn on, cannot realize less than $1,200,000. But besides these, eastern contractors of ample capital, have offered to grade and bridge the whole road, at fair estimates, and take one-fourth of their pay in stock. This equivelant to a subscription of stock to the amount of two or three hundred thousand dollars more.

The whole road completed, with locomotives and every thing ready for effective business, it is estimated will not exceed $1,500,000. But if it were necessary, we could buy the superstructure—that is, the timber or cross ties, and the best iron rails, on a credit payable in part in bonds of the company, redeemable out of the earnings of the road and in part in stock.

There never was a railroad in the West that started with so good a basis. With such prospects, who can doubt the speedy completion of the great work! We were never more sincere in predicting that the completion of the Maysville road will be celebrated before the Covington road will be finished even to Cynthiana,

LUMBER TRADE OF BANGOR MAINE.

The following is a statement of the amount of Lumber surveyed at Bangor for the season ending Dec. 1st, 1850,	201,005,440 ft.
Amount run to Bucksport, and surveyed here	1,411,211
Do. to Fankfort, do.,	1,337,550
	203,754,201

The largest amount hitherto surveyed in any one year was in 1848, when it reached to the sum of two hundred and twelve millions. More has been shipped, however, the present season, than at any prior one. The above figures are exclusive of laths clapboards, shingles, etc., which are technically denominated "short lumber," the annual value of which is estimated by some to equal that of the kinds included in the footing above, the average price of which last has been the present season $10 per thousand feet.

Virginia.

James River and Kanawha Co.—In the absence of the late annual report of this company up the present year, we extract from the Virginia papers, the following statement of its operations for the year just ended:

	Rects.	Disb.	Nett.	
Canal to Lynch	$239,684	$73,815	$155,969	
Richmond Dock	9,531	3,817	5,714	
B Ridge turnpike &c.	1,434	915	519	
Kanawha River	10,989	4,180	6,809	
Kanawha Road	8,629	11,556	2,916	minus.
	270,267	104,174	166,193	

Gross receipts from works as above		$270,267
Ballance on hand 1st Nov., 1849.		22,351
Miscellaneous Rec's.		4,456
Premium on State bonds sold		13,586
		130,653
Disbursements for general administration, repairs, etc., as above	$104,174	
		206,476

INTEREST DISBURSEMENTS.

Annuity to old J. R. Co.	$21,000	
Int. on former bonds ($1,018,645)	117,089	
Do. under act of 1847,	59,340	
Do. do. Dock Con.	3,204	
Do. do. South Side, &c. do.	1,968	
		202,601
		3,878

Besides the disbursements above stated, there was paid, for old unclaimed dividends $10 71, and for redemption of post notes, repairs of Maiden's Advenfure Dam Culverts, etc., $6,203, making an excess of disbu rsements over receipts of $2,335 But this excess is subject to deductions of sums to be paid and to be refunded, to 4,747—reducing the whole defiency to $587 99.

It appears that the company had on hand, on Nov. 1st, 1850, applicable to the completion of the second division, viz.: the section between Lynchburgh and Buchanan, in cash $105,149, in unsold bonds, issued under the act of 1847, $105,100; and in bonds yet to be issued, under the act of 1850, $110,000— total $321,048. For the tide water connection, there was available, on Nov. 1st 1850, in cash, $31,228; in bonds unsold, $235,800, total $267,028. For the South Side and Rivanna Connections, there was available in cash $13,275; in bonds unsold $84100—total $97,375.

It will be seen, from the figures above under the head of Interests, Disbursments, that the company has during the last fiscal year, paid the large sum of $64,502 for interest on guaranteed bonds issued for the construction of improvements which are yet unfinished, and of course yield no revenue. This sum will be necessarily increased when those improvements shall have been completed, and their whole cost expended. But then they will begin to be productive; and there can be little doubt that their aggregate effect will be to furnish the means of paying at least the interests upon their cost. The Dock connection, besides bringing the Dock into active use, will tend greatly to increase the tonnage and tolls of the whole line by removing an onerous tax upon transportation. The South Side and Rivanna connextions will materially widen the area from which the canal will draw its trade: and the Rivanna improvement, especially, must throw upon it nearly all the business of the Albermarle.

Central Railroad.—The cars on the Central railroad are now running from the junction to Richmond.

STOPPING RAIL ROAD TRAINS BY ELECTRICITY.

Messrs. H. Freeman and J. Patterson, of this city, have invented a means of stopping railroad trains by means of electricity, so as to dispense with the service of brake-men. The plan contemplates the arrangment of a Galvanic battery on the locomotive, under the eye and hand of the engineer with a rod running thence to each wheel in the train, connected with the different clogs or brakes, and to be connected with the battery by a trench, so as to apply simultaneously and instantly any desirable amount of pressure to every clog. It is computed that a train may be stopped in half the time now required, and with far less jarring, jerking or wrenching of the cars. Scientific men who have examined the plan have certified that it is entirely feasible.

Tennessee.

Nashville and Chttanooga Railroad.—The steamer Beauty, from Cincinnati, brought a day or two since, a locomotive, a tender, 13 freight cars, and a splended passenger car, for the Nashville and Chattanooga railroad. The engine is the manufacture of A. Harkness and Son, of Cincinnati, and said to be an excellent one. The car is from the manufactory of Keck and Davenport of the same city. This looks like getting ready for the trip to Murfreesborough the 4th of July. We are glad to learn that the road is progressing rapidly "all along the line." All the iron is now shipped and paid for.—*Whig of the 17th inst.*

Ohio.

Cincinnati and Belpre Railroad.—The directors of this company, at a meeting held at Chillicothe on the 14th inst., determined to place the line of their road from Greenfield to a point on the road eleven miles east of Chillicothe, under contract, [grading, grubbing and masonry,] by the 3rd day of March, 1851. The requisite steps were taken, also, to notofy the Hillsboro' and Cincinnati Railroad Co., of the readiness of the Belpre Board to merge the two companies on the "Basis of arrangement" adopted in June last.

From the London Athenæum.

REPORT OF THE COMMISSIONERS APPOINTED TO INQUIRE INTO THE APPLICATION OF IRON TO RAILWAY STRUCTURES.

Iron roads traverse the land in its length and breadth; binding with their chains the remotest districts of the island, and giving to the inhabitants of Great Britain more completely the character of a united family than they have ever before enjoyed. With the increasing commercial prosperity of our country grew the desire to obtain the means of more rapid communication. Maritime Liverpool pined to draw nearer to manufacturing Manchester, and metropolitan London panted to reach more quickly the metal part of Birmingham. Of this gradually intensifying desire the locomotive use of steam, with all its incidents, was more than the fulfilment. Hills were broken down, and their debris employed to fill up the valleys—mountains were bored and rivers spanned—to make the commercial dream a reality. In carrying out these gigantic tasks, the ordinary materials failing to answer the purpose demanded—some new one was to be sought; and wood and stone being abandoned, our highways were paved with iron. The iron rail on which the steam giant toils, with its enormous train, viaducts and bridges, suspended roadways and perforated tunnels, are all constructed from this most important metal.

Though iron has its place in technical history from a very early period, and although man has shaped it into a thousand forms, yet under the new conditions to which it is so extensively submitted it was soon discovered that we were ignorant of its physical conditions, and particularly of its molecular changes. The importance of obtaining this knowledge was pressed on us by more than one painful accident arising from the breaking of cast-iron girders, though they had been previously tested, and proved to be of sufficient strength to support considerably more weight than was to be placed on them. As these accidents had arisen in mills where the iron beams were subjected to the influence of long-continued tremor promoted by the machinery, or on bridges which were submitted to the rapid passage of heavily laden trains, it was thought that some important molecular change must have taken place in the structure of the iron. This impression received support from the evidence of many experiments. Iron bars were selected, which, when broken, presented a fibrous structure, and these were subjected to long continued vibratory action; after which on being broken they often showed a crystalline fracture. These experiments have been deemed by many to be fallacious, and we find Mr. Brunel stating that "the same piece of iron may be made to exhibit a fibrous fracture when broken by a slow heavy blow, and a crystalline fracture when broken by a sharp short blow." We are, however, assured by many of our most experienced machinists that iron does undergo a molecular change when subjected to long continued agitation, and that this injurious change can be always repaired by careful annealing. When we have indisputable evidence of long continued molecular disturbances under the influences of heat and electro-magnetism, we are disposed to believe in the theory that structural derangement may be produced by merely mechanical causes. It was, therefore, to investigate the subject of the application of iron to railway structures that a commission was appointed, consisting of Lord Wrottesley, Profs. Willis and Hodgkinson, Capt. James, and Messrs. George Rennie and William Cubitt, with Lieut Galton as secretary; and well do these commissioners appear to have performed the duty committed to their charge.

At starting, the commission endeavored to make themselves acquainted with all the experiments which had been already made on iron by engineers; and on this point they state:

"From the information supplied to us, it appears that the proportions and forms at present employed for iron structures have been generally derived from numerous and careful experiments, made by subjecting bars of wrought or cast iron of different forms to the action of weights, and thence determining by theory and calculation such principles and rules as would enable these results to be extended and applied to such larger structures and loads as are required in practice. But the experiments were made by dead pressure, and only apply, therefore, to the action of weights at rest. As it soon appeared, in the course of inquiry, that the effects of heavy bodies moving with great velocity upon structures had never been made the subject of direct scientific investigation, and as it also appeared that in the opinion of practical and scientific engineers such an inquiry was highly desirable, our attention was early directed to the devising of experiments for the purpose of elucidating this matter."

As all railway structures are necessarily exposed to "concussions, vibrations, torsions, and momentary pressures of enormous magnitude produced by the rapid and repeated passage of heavy trains," it became a question of the extremest importance to ascertain if any, and what amount of change was produced in iron under these influences. It must be remembered that although the injurious action may be in each case exceedingly small, and unworthy of particular notice, it is, from the nature of the material, probable that such derangement has a certain degree of permanence, and that by multiplying the causes a dangerous, and perhaps fatal, result may ensue. We should not be satisfied that the iron bridges spanning our numerous rivers, roads, and valleys; or the tubes which cross the Menai Straits and continue the Holyhead line at Conway, are secure for a few years to come. We should determine the amount of injury, if any, which is produced by the passage of every train, and so secure these structures that they may be maintained in perfect safety, with ordinary attention, for any period of time. To ascertain the effects of moving weights, a well devised apparatus was constructed in Portsmouth Dockyard, and a very extensive series of experiments made by Capt. James and Lieut. Galton. "The results which they obtained were equally new and important, developing for the first time the fact that *a given weight passing rapidly along a bar produces a greater deflexion in that bar during its passage than it would have done had it been suspended at rest from the centre of the bar.*" That is to say, a much less load will break an iron bar when moving rapidly along it, than will fracture it in a state of rest. In the report we are informed:—

"Thus, for example, when the carriage loaded to 1120 pounds was placed at rest upon a pair of cast iron bars, 9 feet long, 4 inches broad, and 1¼ inch deep, it produced a deflexion of six-tenths of an inch; but when the carriage was caused to pass over the bars at the rate of ten miles an hour, the deflexion was increased to eight-tenths, and went on increasing as the velocity was increased, so that at thirty miles per hour the deflexion became 1¼ inch; that is, more than double the statical deflexion. Since the velocity so greatly increases the effect of a given load in deflecting the bars, it follows that a much less load will break the bar when it passes over it than when it is placed at rest upon it; and accordingly, in the example above selected, a weight of 4150 pounds is required to break the bars if applied at rest upon the centres, but a weight of 1778 pounds is sufficient to produce fracture if passed over them at the rate of thirty miles an hour."

The commissioners properly insist, therefore, on the importance of giving to all railway structures an amount of solidity far superior to that which is found by experiment or calculation sufficient to support as a dead weight the heaviest loads that can travel on them.

A most important series of experiments by Mr. Eaton Hodgkinson on the tensile and crushing strengths of iron under a great variety of forms and conditions, which form appendix A to this report, must prove of the utmost value to engineers; so will the mathematical investigation of the subject by Prof. Willis and Mr. Stokes.

It is shown by some carefully conducted experiments made by Capt. James that the strength of iron bars is not increased with their diameters; owing to the circumstance of their assuming a crystalline structure in the middle during the process of cooling, which goes on, of course more slowly there than on the outside of the bar. This has been frequently observed in large iron castings; but we are not aware of any published set of experiments which so satisfactorily show the great importance of annealing all iron girders, and of limiting the thickness of each mass of iron employed for supporting heavy, and particularly moving, weights, as Capt. James's. This thick blue book and its accompanying volume of plates, we must regard as a valuable contribution to scientific engineering. It is, however, to be regretted that the experiments of the commission did not embrace the effect of wrought iron tension bars on cast iron girders as applicable to such structures as the Dee and numerous other bridges of a similar construction.—By some this form has been absolutely condemned as insecure; while other engineers still contend that it may be employed with safety.

We understand that the labors of this important commission were prematurely stopped by cutting off the necessary funds for carrying on the experiments. Surely, seeing the important uses to which on land and sea iron is now employed, it was not a wise economy to put an end to an inquiry which promised to be of such great national importance.

Ohio.

Railroads Leading from Cleveland.—We copy the following from the Cleveland Herald in relation to the various railroads in progress radiating from that place:—

"The work upon the Cleveland, Columbus and Cincinnati road advances finely. There is sufficient iron here to complete the track to Columbus. About thirty-five miles only are now unfinished.—On the portion unfinished, the contractors are laying from one to two miles of track per day. If the weather prove favorable, within thirty days, we shall have an unbroken railroad connection from Cleveland to Cincinnati.

On our Cleveland and Pittsburgh road, also, they are doing well. The track is mostly laid between here and Bedford—twelve miles—and the necessary cars and locomotives are in readiness for the road. There is every indication, from the energy displayed by the gentlemen concerned in the prosecution of the work for the year past, that a very considerable portion, if not the whole of it, will be completed at an early day.

West of us, from here to Toledo, there are two rival companies, and two different routes. No portion of the line, on our route, is under contract. Between Cleveland and Elyria they have commenced grading the road. The probabilities are, however, that the two companies will reconcile their interests, and become united. If this be done, there are local sources sufficient to construct the road, and its completion will be secured at an early period.

East of us, the Cleveland and Erie road is on good footing; and the stock subscription is gradually filling up. The contractors are busily engaged in getting out the timber and stone for the bridges across Grand river and Ashtabula and Conneaut creeks, which are the heaviest structures on the line. We notice that the workmen are scattered over the route between here and Painesville; and the grading of the road has been commenced at different points. It is in contemplation to have the first thirty miles done by next August; and the most of it, if not the entire road, completed next season. The bill pending in the Ohio Legislature became a law last week, authorising the company to alter their guage, so as to conform to the gauge of the New York and Erie, or any other road, with which they may connect in the State of Pennsylvania. This is an important provision. We learn, however, that it is an open, what gauge will be adopted.

Taken, therefore, all in all, our railroad prospects on every side are extremely good.

STATE DEBT OF INDIANA.

We are indebted to the Tribune for the following detailed statement of the nature and amount of the public debt of this State. The arrangements made when the loan of $800,000 was obtained for the completion of the canal, created no less than eight different descriptions of stock under various titles, and of different values. Under the funding arrangement, the State debt was divided into two parts, one to be called "Indiana State Stocks," and provided for by taxation, and for which the State faith is pledged: and the other called "Indiana canal stocks," and for which the Wabash and Erie canal lands, etc., are pledged. Under this arrangement, for each bond and its accrued interest, the holders received:

1. For one half the principal a certificate for $500, bearing interest at 5 per cent., payable half-yearly, commencing in July, 1847; 4 per cent. in cash, and 1 per cent. funded to 1853: after 1853, the whole payable in cash.

2. For one half of the back interest a certificate for $150, bearing interest at the rate of 2½ per cent. after 1853.

These stocks are payable by the State.

3. For the other half of the principal, a certificate for $500, bearing 5 per cent. interest after the 1st of January, 1847.

4. For the other half of the back interest, a certificate of $150, bearing 5 per cent. interest after the 1st of January, 1853.

These stocks are payable out of the revenues of the canal.

There then exists the following debt and stocks pertaining to the State of Indiana:

1st. Indiana bonds, so long as there are any not converted.

2d. The Indiana canal loan, bearing 6 per cent. interest, issued for the eight hundred thousand dollar loan.

3. The Indiana State 5 per cent. stock, issued for half the principal.

4th. The Indiana State 2½ per cent. stock, issued for half the interest.

5th. The Indiana canal 5 per cent. preferred stock, issued for half the principal to subscribers.

6th. The Indiana special 5 per cent. preferred stock, issued for half the interest to subscribers.

7th. The Indiana canal, 5 per cent. deferred stock, issued for half the principal to non-subscribers.

8th. The Indiana special 5 per cent. deferred stock, issued for half the interest to non-subscribers.

The canal stock issued to subscribers to the loan is called "preferred canal stock," and will be first paid, both principal and interest, out of the canal revenues, before any payment of either will be made upon the canal stock issued to non-subscribers.

The amount of these stocks is as annexed:

STATE.

5 per cent. State stock, paying 4 per cent. till 1853	$4,941,000
2½ per cent. do., interest after Jan. 1, '53.	1,775,600

CANAL.

6 per cent. canal loan	815,850
Preferred canal stock, interest 5 per cent from Jan. 1, '47	4,079,500
Special preferred canal stock, interest 5 per cent. Jan. 1, '53	1,215,825
Deferred canal stock, interest from Jan. 1, '47	861,080
Special deferred canal stock, interest from Jan. 1, '53	250,600

Old Indiana bonds outstanding and unconverted $1,186,000, and interest from 1841. This amount of outstanding bonds, viz: $1,186,000, is convertible, as of Jan. 1, 1851, into the following stocks, viz:

5 per cent. Indiana State, interest 4 per ct. from Jan. 1, 1851, to Jan. 1, 1853	$593,000
2½ per cent. Indiana State, interest from Jan. 1, 1853	308,360
Deferred canal, 5 per cent. interest from Jan. 1, 1847	593,000
Special deferred canal, 5 per cent. interest from January 1, 1853	177 900

Thus the canal preferred stocks, bearing 5 per cent. interest from 1847, issued to the subscribers to the advance of $800,000 for the completion of the Wabash and Erie canal, in Indiana, to Evansvills, on the Ohio river, form the first lien on the revenues of the canal, and the proceeds of the canal lands, after refunding the advance of $800,000. No more preferred stocks can be issued, the books being closed.

The canal is in operation a distance of 268 miles in Indiana.

The tolls for the year ending 1st November, 1850, were	$157,170 95
For the same period, 1849	134,659 03
Increase	$22,511 92

Increase $22,511 92—less $2,228 36 received at the new office opened at Terre Haute during the summer—the balance of tolls for both years having been received on the same length of line. The increase in 1850 would have been much greater if the price of grain had not been so low as to induce farmers to hold back their crops. There remains a large quantity in the country which must come out in the spring. The cash receipts for sales of land amounted in 1850 to nearly $100,000. The quantity of land on hand, according to the last circular from the trustee's office, was 856,498 acres, the appraised value of which was $1,973,512 53. There remain to be completed about 90 miles of canal, running through one of the richest and most fertile regions of country in the western states.—This portion is now under contract for its entire completion; the work is going forward with great vigor, and the entire line is expected to be opened to Evansville early in 1852. The southern portion of this great work will be navigable throughout the entire year. It is estimated that after the completion of the canal, there will remain on hand lands to the value of $1,000,000, equal to 25 per cent. on the whole debt. Estimating the net receipts of tolls during the current year at $100,000, the revenue would be sufficient, if applied to that purpose, to pay 2½ per cent. on the amount of preferred canal stock. What may be expected when the work is completed to the Ohio river, and the outlet opened for the produce of all the southern part of Indiana?

The market value of these different stocks is as follows:

Indiana old bonds with accrued interest coupons thereon from (and including that due on) 1st July, 1841, 55 per cent. or $550 for each bond of $1000, and all their arrears of interest.

Indiana canal 6 per cent. loan, interest payable 1st July and 1st January, at the office of the trustees in this city; 88 per cent. last sales—90 now asked.

Indiana 5 per cent. State stock—81 offered, 82 asked; January interest off.

Indiana 2½ per cent. State stock—sales at 39; interest on them commences in 1853.

Indiana canal preferred 5 per cents—sales at 30 per cent. All interest from 1st January, 1847, goes to the buyer.

Indiana special preferred 5 per cent. canal stocks—sales 15 per cent. Interest on them commences in 1853.

Indiana deferred canal 5 per cent. stock—sales at 10 per cent. Interest on them accrues from 1st Jan., 1847, but is not to be paid till preferred stocks are fully provided for.

Indiana Special Deferred five per cent, Canal Stocks. [Interest commences to accrue after 1853, but not to be paid until Prefered Stocks are all provided for.] 6 to 8 per cent.

In connexion with the above we add the estimate of Governor Wright of the receipts and expenditures of the State of Indiana for the financial year 1851:

Estimated Revenue	$490,000

EXPENDITURES.

State Government	$90,000
Convention	70,000
Benevolent Societies	60,000
July Interest, 1850	93,000
January interest, 1851	100,000
Scrip redeemed	77,000
	$490,000

Manassas Gap Railroad.—We announce with great pleasure, that the President and directors of the Manassas Gap railroad company, have ordered the Chief Engineer to place the work under contract forthwith, up to Wither's Depot, in Fauquier county—a distance of thirty-two miles from the junction with the Orange and Alexandria railroad—giving us a road of sixty miles through a fine country, leading to the great valley of Virginia.—The distance to the top of the ridge, has, also, been ordered to be located and the work commenced.—Thus auspiciously begins this important improvement. May it go on prosperously to its final completion! We will give hereafter the names of the contractors and other particulars.—*Alexandria Gazette.*

MOBILE AND OHIO RAILROAD.

The counties of Macon and Nexubee, in Mississippi, have each voted to subscribe $100,000 to the capital stock of the above road.

Kentucky

Covington and Lexington Railroad.—At the annual election for directors of this road, held on the 7th inst., the following gentlemen were elected:

John S. Morgan, Covington.
C. A. Withers, "
F. G. Gedge, "
M. M. Benton, "
A. L. Greer, "
Lucius Desha, Harrison co.
Augustus Robbins, Pendleton co.

At a subsequent meeting of the board, Col. J. S. Morgan was re-elected President, S. Walker, treasurer, and F. Wise, Esq., secretary.

Massachusetts.

Western Railroad.—The Directors of this Corporation are to meet at Springfield, on Wednesday next, to act upon the annual report and declare the half-yearly dividend. The *Boston Courier* says: The gross earnings of the Corporation for the financial year, ending 30th November, amount to $1,365,000, being an average increase of $2,000 per month over the receipts of the preceding year. The net income after paying the expenses, interest repairs, renewals, etc., leaves cash on hand, at interest, sufficient to pay a semi-annual divident of four per cent, besides carrying 50,000 to the sinking funds and about $10,000 to the contingent fund The sinking funds will be increased this year by the sum of $100,000 of which $50,000 will be taken from the net income, and the other $50,000 from the accrued interest upon those funds, which are invested in mortgages, railroad shares, Massachusetts sterling fives, and $175,000 of Boston and Worcester Bonds, at par; but which are now worth in market 7 per cent premium. The valuation of the two sinking funds is considerably above original cost, and together with the contingent fund, amount to $1,100,000, equal to nearly $22 per share of the capital stock. These funds are silently & rapidly, increasing, and render the stock a desirable investment for present revenue, for security, and for posterity. The Corporation have settled with Mr. Ware, the late receiving and disbursing clerk at Springfield, by taking his note for the sum of $55,000, after receiving from him about $20,000, which was the whole of his visible property; 75,000, having been the amount of the apparent discrepancies in his accounts spread over a series of years. Whether or not this probable loss of $55,000, as above, will be deducted from the large contingent fund, or from the net income of the past half-year, remains to be decided.

AMERICAN RAILROAD JOURNAL.

Saturday, December 28, 1850.

Virginia--Internal Improvements--Governor's Message.

We have been prevented, by a press of other engagements, from bestowing that early attention to the Annual Message of the Governor of this State, which its importance demanded; and we now take occasion to give an abstract of that portion of it which relates to the internal improvements of that State.

The absolute public debt of Virginia now amounts to $9,035,839 30; and there remains yet to be paid, on account of her subscriptions to organised companies, the further sum of $4,632,868 49. Other appropriations, to the amount of $844,000, have been made to companies not yet organised. Of this last named sum, the Governor thinks that not more than $367,132 will be called for.—The payment of these sums would increase the debt to $14,035,839 30. In addition to this, the State is conditionally liable as guaranteeing the bonds of several corporations within her limits, to the amount of $2,844,374. and has promised further guarantees to the amount of $1,103,530; making the whole sum for which she is absolutely and conditionally liable, $17,983,743 30. Almost the whole amount of this debt has been incurred on account of works of internal improvement.

In view of this large debt, the Governor recommends that all further appropriations out of the treasury should be confined exclusively to the great lines of connection with the west begun and under way. The lines are, the James River and Kanawha canal, the Virginia and Tennessee, and the Virginia Central railroads.

While the Governor recommends that no further appropriations should be made but for the objects specified, he says that the improvements already made have exerted a most favorable influence in increasing the value of the landed property of the State. The total value of the lands of the State in 1819 was $206,893,978; in 1838, $211,930,508; in 1850, $274,680,226; the rate of increase from 1819 to 1838 being only 2½ per cent. in 19 years, and from 1838 to 1850, 32½ per cent, being an increase of 30 per cent. in 12 years. While, therefore, the debt of the State is rapidly increasing, the ability of the people to meet the tax to pay the interest arising on it is increasing, perhaps, in still greater ratio.

The immediate object of the construction of the works in which Virginia is engaged, is to develop her resources, and to cheapen and facilitate the transportation of her products. In addition to this, she has in view the ulterior one, of making herself the channel through which shall flow the products of the western States, and of making these the means of building up large commercial cities within her own borders. Norfolk possesses one of the finest harbors on the coast of the United States. It is geographically nearer the centre of Ohio than either Baltimore, Philadelphia or New York, and the message assumes that commercially the same may be made to be true, by the construction, on the part of Virginia, of works similar to those which have the western trade to the cities above named; and it attempts to prove that the James River and Kanawha canal is the appropri te work to accomplish this result. The construction of this canal from Buchanan to the Great Falls of the Kanawha, a distance of 368 miles from Richmond, is already strongly urged upon the Legislature.

To prove the superiority of a canal over a railroad, as an instrument of transportation, Governor Floyd brings forward the success of the New York canals as proof in point, and gives a detailed statement of the progress and business of that great work. He shows the influence it has exerted upon the growth of New York, and anticipates a like result in the growth of Norfolk, whenever the James River and Kanawha canal shall reach the Ohio.—With great deference to so high an authority, we think that he has committed a great error in reasoning from one case to the other, in assuming what remains to be proved, and what is essential to his argument, viz: a similarity of circumstances in the two cases; and in the next place, that because the Erie canal has thus far been the outlet of western produce, it is superior to a railroad as a medium of cheap transportation.

We have very often expressed the opinion, that, while the Erie canal presents an instance of wonderful success, and has done more than any other work having a similar object, to promote both the foreign and domestic commerce of the country, the very fact of its success had exerted a very injurious influence upon the action of other States. The results which followed the opening of that great work stimulated other States into the construction of works of a similar character. These States, in commencing these works, looked simply at *results*, overlooking the important fact that the success of this work depends upon conditions peculiar to itself, and not found in connection with any similar one in the country. This connects by the shortest water line, the Atlantic and the great lakes, having an extent of ship navigation of more than a thousand miles, surrounded by the finest portions of the Union, and to which is naturally attracted, and over which passes, a large portion of the products and commerce of the country. The line of this canal presents an almost uniform slope from Lake Erie to Albany, and commands an unlimited supply of water at all times, and from the level nature of the country traversed, is seldom affected by freshets. For the vast trade between these great lakes and tide water, this work has thus far been the only practicable outlet, the legislature of New York protecting it from the competition of railroads occupying the same route. Now no other line possesses advantages that will bear any proportion to this, as far as its connections are concerned. No canal in this country, built or projected, can expect to receive a tithe of the business of the Erie. But its superiority to all others bears no comparison to its superiority of profile, and the peculiar adaptedness of the country traversed for such a work. The whole amount of lockage from Cincinnati to New York, via the Miami and Erie canals is 1239 feet. From Pittsburgh to Philadelphia, via the Ohio river and the Pennsylvania canal, the lockage, or rise and fall, is 4514 feet, and from the Ohio to Richmond, via the route of the James river canal, the rise and fall is about 4000 feet. The New York and Erie canal must therefore, on account of superiority of route, always furnish a cheaper medium of transportation between Cincinnati and the Atlantic coast than any other *water* route that can ever be constructed south of it.

While the Erie canal has this great advantage over all others in amount of rise and fall, this fact constitutes but a small part of its great superiority. From the nature of the country traversed by this work it is almost entirely free from all danger from injury by freshets. The cost and difficulty of maintaining a canal, increases in vastly greater ratio than its increased ascent. The reason of this is too obvious to need pointing out. The recent disastrous flood on the Schuylkill is sufficient evidence of this fact. But the James river and Kanawha company propose to carry their work over the summit of the Alleghenies at an elevation of about 2,500 feet above tide water. Now we believe that the maintenance of this work, if its completion were practicable, would be found impossible, even with its whole revenues. It is yet a problem whether sufficient water can be obtained for the summit. But we believe that the difficulty from this source would not be half so great as that of protecting the line from the mountain floods. This company have already had some experience of what they will have to contend with, the higher they ascend the mountain. We know of no *successful* work that has been constructed under the same circumstances.

The experience and opinions of those who have

been engaged in the construction of similar works, should have its proper effect upon the action of this company. The project of a canal from the navigable waters of Virginia to the Ohio, dates back far beyond the introduction of railroads. Now it strikes us that this company have not paid sufficient respect to the progress that has since been made in the science of locomotion. The recent application of newly discovered forces has, within about twenty years, wrought a complete change in the mode of travel and transportation. The canal at the present day is entirely deserted as a route of travel, and in many parts of the country is abandoned as a route of transportation. It is still an undetermined problem, whether, under the most favorable circumstances, a canal can carry cheaper than a railroad. Perhaps the best test that we have had in the relative capacities of the two modes, is to be found in the case of the Reading railroad and the Schuylkill canal, and the contest between these two works has certainly not been to the disadvantage of the railroad. All the canals in Massachusetts have been given up. Pennsylvania has virtually decided against her line of canals, by constructing a railroad parallel to her great work which has cost her so much money. In fact, without multiplying illustrious canals, of any considerable length of line, are now looked upon as belonging to the past, and as not adapted to modern ideas; and no one thinks of commencing a new work of this kind, and only such lines are projected, as require to be finished, to save some portion of the vast outlay which has been made upon them. In Ohio, Indiana, Illinois, not the slightest attention is paid to the canals, in constructing the projected lines of railroad, and the existence of a canal is considered no reason against running a railroad by the side of it. We must not look upon the great change which has within a few years taken place in substituting railroads for canals, as resulting from caprice, but from the conclusions of experience in the use of the two, and as expressing the deliberate sentiment of the community upon their respective utility.

The Governor of Virginia assumes that the capacity of the Erie canal to carry cheaper than a railroad is proved. There is as yet no evidence to show this, because the legislature of this State has never allowed the experiment to be made. In addition to the cost of conveyance, which of course includes the profit upon the capital invested, have been imposed the exhorbitant canal tolls upon the only road which could come in competition with it. But the completion of the Ogdensburgh railroad, and the capacity it has shown for cheap transportation, and the early prospective opening of the Erie railroad, has excited great alarm among the friends of the canal. At the present time the capacity of the canal is taxed to the utmost, and any reduction of tolls would reduce the revenue, and thus postpone the work of enlargement. The railroad from Albany to Buffalo can carry at a much less rate than that charged by the canal, and it can carry much cheaper than the Erie canal ever can, and pay a dividend upon its cost. The friends of this work were never in a greater dilemma than at this moment; and no subject in this State is receiving more attention than the question as to the steps proper to be taken to put this great work in condition to meet the rivalry which it must soon encounter, in the lines of railroad which are soon to come in competition with it. Up to this time it has enjoyed an undisturbed monopoly. It must soon be prepared to reduce its tolls at least 33 per cent., to retain its business. If this canal, occupying the most favorable route, cannot compete with railroads, how can the James River hope to do so, as a railroad would be certain to follow its extension to the Ohio.

Another great point in favor of railroads, is their greater income upon the amount expended. The extent of line of the James River and Kanawha canal now opened, is 148 miles. The gross receipts of the main line for the year just ended, are $239,000, equal to about $1,600 per mile. Now we think that a railroad between Richmond and Lynchburg, without any competing work, would have earned at least $4,000 per mile. The Baltimore and Ohio railroad in the current year has earned at the rate of about $7,000 per mile, gross. The Western railroad has earned $8,600 per mile. The stock in the James River company has all been lost. We believe that if a railroad had been built in its place, it would have been good property. This work barely earns sufficient to pay the interest on its indebtedness. If it should be extended beyond Buchanan, would it do as much as this?

Again, this work has completely failed to give a decided impulse to the public mind of Virginia.—Lynchburg has done but little more than hold its own since the canal was opened. With a railroad instead, it would have now contained treble its present population. Towns would have sprung up upon its line. Richmond would have increased vastly more than she has done; in short, we should have witnessed here the same magic change which always manifests itself, wherever railroads are constructed. Railroads attract people, because every person who resides by one, feels himself to be in the world; that he himself is a *part* of society. It enables him to mingle with his fellow men at will.—Canals give no such facility. They are not adapted to social intercourse. Hence the only result that flows from them is simyly an immaterial one.

The completion of the James river canal to the Ohio has long been a favorite project with Virginia. But she should not suffer her fondness for this, control her judgment. We are fully satisfied that she should not attempt to push this work beyond Buchanan, but that the connection with the Ohio should be made by a railroad over the mountains. The example of Pennsylvania, and the enormous debt of that State, should teach her to avoid the mistakes of the former, before it is to late to retract.

New Railroad Route from New York, West.

A new route from this city, west, to be formed by an extention of the Morris and Essex railroad, to the Delaware Water Gap, thence by a road in a northwesterly direction, to the southern terminus of the Leggett's Gap railroad, and by the last named road to Elmira, on the Erie railroad, is now attracting much attention. The distance from N. York to Elmira by this route is stated to be as follows:—From New York to the Water Gap 85 miles; from the Water Gap to the Leggett's Gap railroad 45 miles, and from the Leggett's Gap railroad to Elmira 64 miles, making the whole distance 194 miles, against 283 miles by the Erie, between the same points.

The Morris and Essex railroad, which forms the first part of this line, is already in operation to Dover, New Jersey, a distance of 45 miles. A survey for the extension to the Water Gap has been made, showing a very favorable route. The construction of this extension will, without doubt, be immediately commenced. The Leggett's Gap railroad is also in progress, leaving but 45 miles to be provided for. This is the portion between the Delaware river and the Leggett's Gap railroad. From the best information which we have been able to obtain, we believe that this portion of the line presents no serious obstacles to the easy construction of a railroad.

If the above distances are correctly stated, and they appear to be well vouched, the above project becomes of great importance to New York as an additional and shorter route to the west, in addition to the great local advantages to be derived from it. It would open another avenue to the coal fields of Pennsylvania, and the present high price of coal, for the lack of such avenues, shows its importance in this respect. The agricultural resources of the country on the above route are very considerable, and would furnish a further supply to our markets. Immediate steps will be taken, we presume to bring this project before the public in a connected shape. If it shall turn out to be as favorable as it has been represented, both as regards distance and facilities for construction, we may regard its accomplishment certain at no very distant day.

Virginia.

Richmond and Danville Railroad.—From the recent report of Mr. Tunstall, President of the above company, we learn that the portion of the road to the Chesterfield coal mines has been completed.—It was expected the road would be completed to the Appomattox river by this time, but the company has been disappointed in this, by the failure to receive the iron ordered from England several months ago. This, however, will soon arrive, and the work of laying the superstructure will be immediately commenced.

The progress of the road has been much delayed by the want of punctuality among the stockholders in paying their assessements. The President states that there is now due on the requisition of last October, $55,000 for private subscriptions, dependent upon which is $82,500 due from the State, making the sum of $137,500 called for in October and yet unpaid.

In reference to the amount necessary to be raised to complete the work, the report says:

"There remains yet to be raised by individual subscription, the sum of about seventy-eight thousand dollars, to complete the private capital of this company, which, with the additional amount of one hundred and fifteen, dependent thereon from the State, would give us the sum of near two hundred thousand. The guaranteed bonds of this company, under the act of the last Legislature, will procure a sufficient quantity of heavy rail to reach some seventy miles, and the iron and timber already purchased and paid for will reach Danville. The money to be subscribed, therefore, is principally for grading the road."

The report favors the location of the road as far north as the interests of the work will allow, with a view of securing its connection with the Virginia and Tennessee railroad at Lynchburg, and also recommends an extension of the road into North Carolina so as to connect it with the Central road of that State.

Canada.

Toronto and Lake Huron Railroad.—Contracts for the construction of this road have recently been concluded with M. C. Story & Co., well known contractors of this State. The engineering department is to be superintended by H. C. Seymour, Esq., at present State Engineer of New York. The road is to be about 80 miles long, and is estimated to cost $25,000 per mile, or $2,000,000 in the aggregate. Of this sum, the contractors take one-quarter. A like sum has been raised in cash subscriptions. The balance will be furnished by the Provincial guaranty.

The success of this project is mainly attributa-

ble to F. C. Capreol, Esq. of Toronto, who has labored most assiduously in its behalf from the ontset, under every discouragement, from the opposition of some, and the lukewarmness of the great mass, who were to be benefitted by the success of the work. We are glad to see that success has at last crowned his efforts.

The road is a very important one to the travelling and business public, as it connects Lakes Ontario and Huron, by a line not much exceeding 80 miles—thus saving the long circuit by Niagara Falls and Lake Erie.

New Hampshire.

Cocheco Railroad.—At a meeting of the stockholders of the Cocheco railroad, held on the 16th inst., it was voted, with great unanimity, to authorise the directors to issue an eight per cent preferred stock, to an amount not exceeding $250,000, for the purpose of completing the road to Alton Bay. This stock is nearly all taken up, and contracts for grading the road to the bay have been made, and the contractors are at work. It is the intention of the directors to have the road completed by the first of July next.

Connecticut.

New Haven and New London Railroad.—Contracts have concluded for the construction of this road. The distance from New Haven to New London is fifty miles; from New London to Stonington, 12 miles, to which the road will probably be extended; making the distance between New York and Boston by this route 231 miles against 238 by way of Springfield.

We published some time since a copy of the report of the survey of this route. It will run thro' a number of thriving villages, and will connect New York with a number of important points not now easily accessible by railroad, and will form a continuous route between this city and Providence, a matter of no small importance. At New London it will connect with the New London, Willimantic and Palmer railroad, extending to the western railroad, at the latter place, a distance of 66 miles; also with the Norwich and Worcester, and will form a trunk line for both of these, as well as the Stonington railroad to New York.

The project is one of great public utility, and we see no reason why it may not be profitable to those engaged in its prosecution.

Maine.

York and Cumberland Railroad.—This important line of railway, in the Maine system of public improvements, is now going forward with favorable assurances of success, and only needs proper encouragement from the city of Portland to become one the most profitable sources of wealth to that city.

As an interior trunk line to Boston, from Portland and the east, it has the same advantage over its natural rival, the Portland, Saco and Portsmouth railroad, and to the same extent, as the Boston and Maine railroad possesses over the Eastern. But this is a portion only of the advantages of this line.

Burlington, on Lake Champlain, can by railway reach the seaboard at Portland in a line from 40 to 60 miles less than the distance to Boston. By extending a branch line from Gorham to the line of the Boston, Concord and Montreal railroad of New Hampshire, a direct connection would be formed between Burlington and Portland, as soon as the lines shall be extended between Plymouth and Montpelier.

The first division of the York and Cumberland railroad, extending from Portland to Gorham, a distance of 11 miles, is to be opened the present month, and the work has been commenced at Great Falls, extending in the direction of Alfred..

This company, in conjunction with the Kennebec and Portland railroad company, have just finished a most elegant and substantial depot on the cove side of the city of Portland.

This depot is an ornament to the city, and one of the most elegant structures of the kind in the country. It is 100 feet wide in the clear (with 10 feet projections for awnings on each side), by 280 feet in length, with 22 feet posts, the roof supported by a truss. The suits of rooms and offices are taken off from the eastern end of the building, occupying 30 feet, giving inside a spacious room 220 feet long by 100 feet wide, and 22 feet high to the bottom of the stringers.

This building is by many regarded as one of the finest specimens of railway architecture in the country. It reflects the highest credit upon A. P. Robinson, Esq., Chief Engineer of the company, and upon the Messrs. Clapp, the builders. These gentlemen, the leading capitalists of Maine, have recently filled up some twenty acres of flats on Back cove, in the centre of which stands this fine structure, built by them for the companies on land conveyed by them for the purpose. The depot is to be hereafter extended so as to occupy a square of 500 feet in length, with streets of the width of 80 feet on each side of it.

These extensive improvements of the Messrs. Clapp seem to promise the most satisfactory results.

Notice to Contractors.

COVINGTON AND LEXINGTON RAILROAD.—Sealed Proposals will be received at the office of the Covington and Lexington Railroad Company, in this city, until the seventh day of January next, for grading eighteen (18) miles of the Covington railroad, commencing at the proper end of section No. twenty, (20) near E. Clarkson,s house, and extending up the valley of the Licking river, and along the left or Western bank to the town of Falmouth, in Pendleton county. The proposals will include all the excavations and embankments, and the masonry for culverts; also the masonry for bridges.

Plans and specficiations of the work to be done and the terms of payment may be seen at the office of the Company, at any time between the twenty-seventh of December and the seventh of January.

SYLVESTER WELCH,
Engineer Covington and Lexington Railroad.

Office of the Covington and Lexington Railroad, Covington Ky., Nov. 25th, 1850.

Notice to Contractors.

ENGINEER'S OFFICE E. T. AND VA. R. R. Co.,
Jonesborough, Nov. 30th, 1850.

SEALED PROPOSALS for the graduation and masonry of forty miles of the East Tennessee and Virginia Railroad will be received at the Office of the Chief Engineer, Greenville, Greene County, E. Tenn., until the 15th day of January next.

A fine opportunity here presents itself to good contractors. Labor and supplies abundant and cheap, the country remarkably healthy, and every opportunity for the successful prosecution of the work.

This link of forty miles commences at McBee's Ferry, on Holston River, 15 miles east of Knoxville, and extends to Bull's Gap.

A fine variety of work will be offered, and experienced contractors would do well to give it their attention.

Specifications, maps, profiles, &c., &c., will be in readiness for the inspection of contractors by the 25th of December.

By order of the Board,
LLOYD TILGHMAN,
Chief Engineer.

Railroad Letting in Ohio.

Bellefontaine and Indiana Railroad.

SEALED PROPOSALS will be received at *Jacksonville*, Darke county, Ohio, (known also as Versailles), until January 21st, 1851, for doing the Grubbing, Clearing and Grading on 25 miles from Loramie Creek to the junction with the "Indianapolis and Bellefontaine Railroad" at the Indiana State Line. Profiles are now ready at the Engineer's Office in SIDNEY, Shelby county, Ohio, where information can be obtained from Israel Pemberton, Resident Engineer. Proposals may also be left at *Sidney* till the 20th of January.

SEALED PROPOSALS will also be received at MARION, Ohio, until February 5th, 1851, for doing the Grubbing, Clearing and Grading on about 40 miles between Marion and Bellefontaine. The work, and profiles on this division, will be ready ten days before the letting. Information can be obtained from Alexander Worrall, Resident Engineer, at Bellefontaine, and at the Chief Engineer's Office in Marion.

The above are the only portions on the route not yet under contract. This road is known as the "third link" in the "great central backbone chain" from Philadelphia to St. Louis, and likewise as the western continuation of the main lines from Boston and New York, through Cleveland.

By order of the Board of Directors.
W. MILNOR ROBERTS,
Chief Engineer.

Engineer's Office, Marion, Ohio,
December 10, 1850.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

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Published by George Duggan, 300 Broadway, New York, to whom all communcations should be addressed and subscriptions forwarded.

☞ Parties remitting Mr. Duggan $5, and the remainder $4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc.," shall receive it monthly as published. To those making Mr. Duggan a present remittance of $9, the work will be forwarded post free to any part of the United States.

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The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susbuehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 70 feet span, erected by the N. York Iron Bridge Co. over Morris Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

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300 Broadway, New York.

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This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the Inventor, and the Manufacturers have already disposed of over 3,000 of the article. Manufactured and sold by

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They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

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Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

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THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

To Contractors.

SCIOTO AND HOCKING VALLEY RAILROAD. Sealed Proposals will be received at the Railroad Office in Portsmouth, Ohio, until the first day of January, A. D. 1851, for the Grading, Masonry and Bridging of 25 miles of the above road—20 miles extending from Portsmouth to the 20th mile Post, two miles east of Bloomfield, Scioto county, and five miles extending from Jackson, Jackson county, southerly to station number 2046.

The character of the work is such as is usually found in the State, consisting of about 30 sections of Grading, varying from five to eighty thousand cubic yards.

Plans and specifications will be ready for examination after the 15th day of December next, and the line ready for inspection after about the 20th of December.

Contractors proposing for the Bridging may bid according to plans furnished by the Engineer, or according to plans furnished by themselves.

By order of the Board of directors.

J. V. ROBINSON, President.
J. W. WEBB, Chief Engineer.

Scioto and Hocking Valley R. R. Office,
Portsmouth, Nov. 19, 1850.

American Railway Guide.

This is the best Guide Book for Travellers now in use. It is carefully revised and corrected monthly, and contains valuable tables giving information of Southern, Western and Eastern routes, not to be found in any other publication.

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☞ The most complete and accurate guide ever published.—[Scientific American.

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NOTICE

For Proposals for Railroad Iron, for the Alabama and Tennessee River Railroad,

TO BE MANUFACTURED FROM ALABAMA ORE.

THE Alabama and Tennessee River Railroad Co. invite proposals, until the 1st of January, 1851, for Iron Rails, to be made of Alabama Iron, for the Northern Division and part of the Southern Division of their road, embracing a distance of about 105 miles. The rails are to be of the H pattern, in lengths of 18 feet, and weighing 63 lbs. per lineal yard. They are to be delivered on the Coosa river, at a landing to be hereafter designated, between Kimulgee ferry and Fort Williams, commencing their delivery on the 1st of November, 1851, and continuing it at the rate of from 80 to 100 tons per week, until the whole quantity required (10,500 tons) shall have been delivered. They are to be inspected by Lewis Troost, Chief Engineer.

It is proper to state to iron masters and capitalists at a distance, that the country traversed by the Northern and part of the Southern divisions of the road abounds in excellent iron ore and bituminous coal, and possesses every advantage for the successful manufacture of iron, health, cheap labor and provisions.

Further information may be obtained by addressing the President of the Company at Selma, Ala.

By order of the Board of Directors.

J. W. LAPSLEY, President.

Boardman's Patent Improved Steam Boiler and Furnace.

THE Patentee is now prepared to sell single or territorial rights to the use of the above named improvement. Recent experiments have demonstrated that this form of Boiler effects a saving of one-half the fuel required to run the best Cylinder Boiler with return flues, and about 40 per cent. of the amount used by Locomotive Boilers. The heat is so thoroughly applied to the water that the temperature in the chimney is reduced below 140 deg. The smoke and combustible gases are consumed within the furnace. The refuse gas instantly extinguishes flame or sparks, so that all danger from sparks is avoided. This Boiler is very compact in form, occupying less space than any other of like power.

References—Thomas H. Faron, Chief Engineer U. S. Mail Steamer Arctic, N.Y.; Messrs Mott & Ayres, and Mr. D. F. Jaycox, Chelsea Iron Works, 26th street N.Y.; Messrs. Tugnot. Daily & Co., Franklin Forge, 1st avenue, N.Y.; Mr. John Mills, Machinist, 319 5th street, N.Y.; Mr. W. C. Smith, St. Albans, Vermont; and Messrs. Goulding,

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September, 1850.

ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Bancks, C. W.,
Civil Engineer, Vicksburg, Miss.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W, H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

Roebling, John A.,
Trenton, N. J.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Sours, Peter,
Rahway, New Jersey.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Panama Railroad—Address through office of Panama Railroad Co., 78 Broadway, N. Y.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

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The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. BARNUM & CO.

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July, 27, 1849.

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Railroad iron,
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IRON.

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Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns' for sale by
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DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatain nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

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100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.
300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
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New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.
New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.
COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

Railroad Iron.

1,500 Tons weighing 58 lbs. per lineal yard.
500 " " 57 " "
500 " " 56 " "
500 " " 60 & 61 lbs, "

Also 2½x½ flat rails. All the above being of approved patterns. For sale by
DAVIS, BROOKS, & CO.,
68 Broad street.

N.B.—Rails imported on commission, or at a fixed price.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.
T. & E. GEORGE.
Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited. COOPER & HEWITT,
17 Burling Slip, New York.
February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.
WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.
And at 5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.
July 27th, 1850.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent*,
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.
THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
73 New street,
February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N.Y
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md
November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.
45 North Water St. Philadelphia.
March 15, 1849.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ¼ to 5 inches diameter. Flats, from ¼ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call. J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
6m9 62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electerised Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniatta Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND

ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40	Best Flange Bars	5½x2	inches,	11 feet long.
40	"	5½x2	"	7 feet 8 in. long.
40	" Flat "	6x2	"	11 feet long.
40	"	6x2	"	7 feet 8 in. long.

Now in store and for sale by
RAYMOND & FULLERTON,
45 Cliff street.

IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
76 N. Water St., Philadelphia.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.

New York, March 26, 1850. 3m

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6. 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntzs Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

Bowling Iron. Stamped B.O.

Railway Tire Bars	Rivet Iron
Locomotive and other Axles	Locomotive Frame do
Boiler Plates	Bars,

and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

Railroad Iron.

SPIKES.

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York.

Ray's Patent India Rubber Car Springs.

Savannah, Ga., May 22, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: I have no hesitation in saying, after having used on our road your springs and Fuller's, that I consider yours decidedly the best in every particular, and in this opinion I am sustained by all our officers. Fuller's spring has a tendency to split, and also to chafe or abrade by the constant friction on the cast iron plates or disc: and in my opinion is not near so elastic as yours.

Your springs, which have been in use on our road for 12 or 15 months past, and in constant use under both passenger and freight cars, are to all appearances as elastic, sound and good, as when first put in use.

We are now building eighty-five new cars, of which for fifty-sets the springs have been ordered of you.

GEORGE A. ADAMS,
Master Carpenter,
Central Railroad and Banking Co. of Georgia.

—

Connecticut River Railroad Office,
Northampton, May 4, 1850.

E. CRANE, Esq.,

Dear Sir: It is now about two years since I first tried the experiment of using a set of Ray's India-rubber Springs upon one of our merchandise cars, and although the car has been in constant service since that time, I do not on examination find the slightest difference either in the thickness or elasticity of the material.

The same result has followed wherever we have applied them, either for wheel or draw springs on Engines, Tenders or Cars. At present we use no other; either in replacing old springs or building new cars—and I am perfectly satisfied that for economy, durability, safety, and ease of motion, that Ray's India-rubber is the best article for Springs which has been presented to the public.

Yours respectfully, J. HUNT,
Supt. Connecticut River Railroad.

—

EDWARD CRANE, Esq.,

Dear Sir: Having applied to cars of the Boston and Worcester Railroad Corporation, Ray's Vulcanised Rubber Springs (where they have been in use for some two years last past), I have had occasion to observe their operation, and am free to say in answer to your inquiries, that they retain their *elasticity* perfectly during all changes of atmospheric temperature: and are in my opinion a most valuable acquisition to Railroad Cars—are not liable to derangement, as is the case with steel springs; while at the same time it costs less to apply them. Respectfully yours,

D. N. PICKERING,
Supt. Motive Power, Bost. & Wor. Railroad.
Boston, April 15th, 1850.

EMERSON'S

PATENT

CORRESPONDING VENTILATORS,

For Ships, Steamers, etc.,

Manufactured by

CHILSON, ALLEN, WALKER & CO.,
351 Broadway, New York.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring. F. M. RAY

New York, Oct. 23, 1850.

RAILROAD CAR MANUFACTORY

TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.

Passage, Freight and all descriptions of

RAILROAD CARS,

AS WELL AS

LOCOMOTIVE TENDERS,

Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

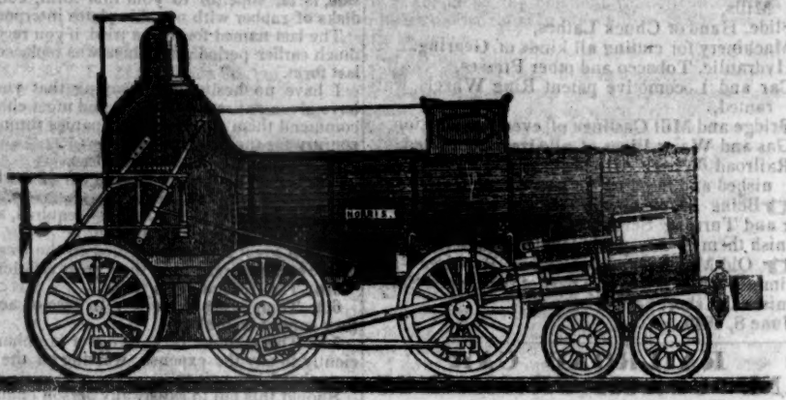
He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others. J. L. BROWN.

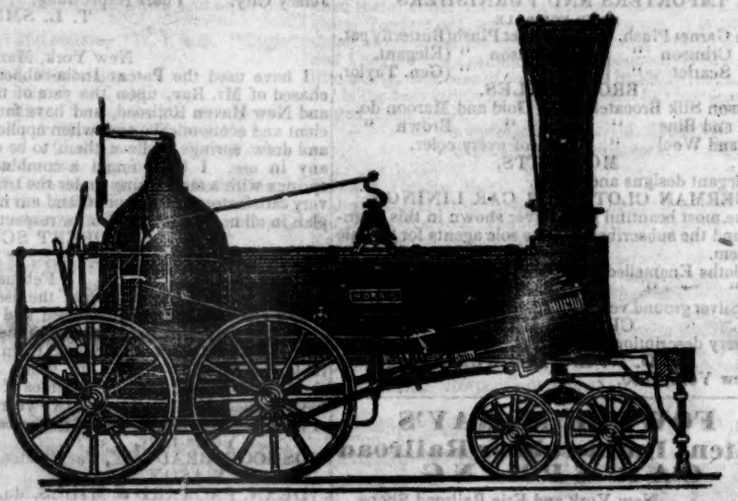
☞ Bank Scales made to order, and all Scales of his make Warranted in every particular.

Reference given if required

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest. P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
☞ *Sole Manufacturers.* ☜
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

☞ The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

COLUMBUS, OHIO,

Railroad Car Manufactory. RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited. 1y8

FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.